XXIV.—*Synopsis of the Fructification of the Simple* Sphæriæ *of the Hookerian Herbarium.* *By* Frederick Currey, *Esq.*, *M.A.*, *F.R.S.*, *F.L.S.*

Read May 5th, 1859.

In a paper published in the last Part of the 'Transactions' of this Society, I have figured and described the fructification of all the species of compound *Sphæriæ* contained in the Hookerian herbarium, that is to say, of all those species whose fruit was sufficiently perfect. Sir William and Dr. Hooker having kindly afforded me the same facilities for the examination of the other great division of the genus, that is the simple *Sphæriæ*, I am now enabled to lay before the Society the result of my examination of the remaining species contained in their herbarium. I adopt the course pursued in the former paper, of prefixing a short account of the characters of the sections and divisions, as given in the 'Systema Mycologicum.'

Most of the plants described in the present paper belong to the genus *Sphæria* as limited in Fries' 'Summa Vegetabilium Scandinaviæ,' but a few are referrible to some of the new genera proposed in that work, and I have noted such of the species as belong to the new genera, and have given the characters of such genera in the notes, as they occur.

The simple *Sphæriæ* commence with the 5th Section, "Superficiales."

Section V. Superficiales.—*Perithecia* free, bicorticate, seated on an effused villous subiculum, or altogether superficial.

Div. 17. Byssisedæ.—*Perithecia* free, glabrous, with a short subpapillæform ostiolum, seated on a tomentose subiculum, formed of densely interwoven threads.

Div. 18. Villosæ.—*Perithecia* ovate or globose, clothed with simple persistent down; ostiolum even, subpapillæform, rarely elongated or obsolete.

Div. 19. Denudatæ.—*Perithecia* naked, ovate or globose, glabrous, without any subiculum; ostiolum short, subpapillæform.

Div. 20. Pertusæ.—*Perithecia* naked, glabrous, flattened at the base, adnate or immersed, pierced by the falling off of the ostiolum.

Section VI. Subimmersæ.—*Perithecia* immersed, often erumpent; ostiolum conspicuous, dilated, or elongated into a neck.

Div. 21. Platystomæ.—*Perithecia* at first covered, then more or less exposed; ostiolum somewhat compressed, very broad, opening by a longitudinal fissure.

Div. 22. Ceratostomæ.—*Perithecia* at first covered, often surrounded with down, then emerging, naked, free, black, terminated by a beaked cylindrical ostiolum generally longer than the perithecium.

Div. 23. Obtectæ.—*Perithecia* immersed in the perennial parts of plants, with a short erumpent neck, which is often dilated at the apex.

Section VII. Subinnatæ.—*Perithecia* innate in the epidermis of the matrix.

Div. 24. Obturatæ.—*Perithecia* at first innate, covered by the epidermis, then erumpent, naked, almost superficial, glabrous; ostiolum naked, papillæform or rimosely dehiscent.

Div. 25. Subtectæ.—*Perithecia* innate, covered, at length erumpent, concrete with the matrix, often without a prominent ostiolum.

Div. 26. Caulicolæ.—*Perithecia* subinnate, at first covered, at length exposed by the separation of the epidermis, discrete from the matrix.

Div. 27. Foliicolæ.—*Perithecia* innate, covered, connate with the matrix, very rarely erumpent or free.

Div. 28. Depazea.—*Perithecia* simple, innate, seated on an arid spot on leaves which are still green.

Div. 17. Byssisedæ.

215. S. Glis, Berkel. and Currey MS. Tab. LVII. fig. 1, ascus with sporidia, × 220. Sporidia biseriate, pale brown, simple, slightly curved, 0·0009 to 0·001 inch long, rounded at each end. Perithecia rather large, round and very flat, seated on a dense subiculum, usually entirely hidden beneath the bark, not erumpent, but raising the bark into smooth, rounded, or elongated swellings; the perithecia and subiculum are usually of a dark dirty green tinge. I do not know where to classify this plant, if not with the *Byssisedæ*, although it is quite anomalous to find a *Sphæria* of this division entirely hidden by the bark. The presence of the fungus is only indicated by the smooth swelling of the small branches of oak, on which it occurs. The wood of these branches is generally somewhat decayed. The *Sphæria* is common in the neighbourhood of Weybridge, and I have also found it near Tunbridge. It grows, as far as I know, only on oak, and I am not aware that it has been hitherto described. Some of my correspondents have received it from me under the manuscript name of *S. tomentosa*; but Mr. Berkeley, to whom I sent it at first without a name, marked it in his herbarium as *Sphæria Glis*, and at his request I have adopted that name.

216. S. Desmazieri, Berk. and Br.; Ann. & Mag. Nat. Hist. 2 ser. vol. ix. p. 318. pl. 9. fig. 1. Tab. LVII. fig. 2, ascus with sporidia, and free sporidia, × 325. Sporidia uniseriate, overlapping, dark brown when ripe, with globular and irregularly-shaped nuclei, subcymbiform, somewhat flexuous, 0·0013 inch long.

217. S. (Nectria) rosella, A. and S.; Fr. S. M. ii. p. 441. Tab. LVII. fig. 3, sporidia, × 325. Sporidia fusiform, slightly constricted in the middle, colourless or greenish, with the endochrome bipartite, 0·0010 to 0·0012 inch long.

218. S. aquila, Fr. S. M. ii. p. 442. Tab. LVII. fig. 4, sporidia, × 325. Sporidia dark brown, almost opaque, almond-shaped or subcymbiform, or oblong and slightly curved, sometimes with one, two, or three nuclei, 0·0006 to 0·0008 inch long.

219. S. truncata, Sz.; Fr. S. M. ii. p. 442. Apparently not distinct in any material respect from *S. aquila*, Fr.

220. S. fulva, Fr. El. ii. 90. Tab. LVII. fig. 5, asci with sporidia, and free sporidia, × 325. Sporidia biseriate or crowded, occasionally uniseriate, colourless, broadly almond-shaped, sometimes subcymbiform, 0·0004 to 0·0005 inch long; endochrome bipartite, sometimes continuous.

221. S. (Nectria) aurantia, Pers.; Fr. S. M. ii. p. 440. Tab. LVII. fig. 6, ascus with sporidia, and free sporidia, × 325. Sporidia uniseriate, colourless or greenish, almond-shaped or flexuous, 0·0006 to 0·0008 inch long; endochrome bipartite. On

Polyporus versicolor. I have in my herbarium a *Sphæria* on *Polyporus hispidus*, not apparently distinct from *N. aurantia*, Pers., but producing the fruit shown in fig. 7, where the sporidia are elliptical, not acuminate or flexuous, 0·0005 inch long, and very different in appearance from those of the Kew plant.

222. S. THELENA, Fr. S. M. ii. p. 441. TAB. LVII. fig. 8, ascus with sporidia, × 325. Sporidia uniseriate, black-brown, opaque, elliptical or slightly curved, sometimes with a large nucleus, 0·0009 inch long. Not distinct, I should say, from *S. aquila*, Fr., although the sporidia are rather narrower.

223. S. LANATA, Fr. S. M. ii. p. 442. The specimens of this plant are in bad condition. I could find very few sporidia, and those hardly differed from the sporidia of *S. thelena*, except perhaps in being slightly more acuminate. Perithecia somewhat collapsed, without a manifest ostiolum; subiculum loose, hairy.

224. S. SUBICULATA, Sz.; Fr. S. M. ii. p. 443. TAB. LVII. fig. 9, sporidia, × 325. Sporidia broadly elliptical, with sometimes one, sometimes two nuclei; the two occasionally approaching so close as to give a septate appearance, dark brown, 0·0004 inch long. The subiculum is wanting in the Kew specimens. The plant is like *S. aquila*, but the perithecia are blacker, flatter, and much smaller.

225. S. ALLIGATA, Fr. S. M. ii. p. 445. TAB. LVII. fig. 10, ascus with sporidia, × 325. Sporidia uniseriate or biseriate, yellowish, oblong, obtuse or somewhat pointed at the ends, constricted in the middle, 0·0007 inch long. Erumpent, but furnished with a subiculum; endochrome bipartite.

226. S. TRISTIS, Tode; Fr. S. M. ii. p. 444. TAB. LVII. fig. 11, sporidia, × 450. Sporidia biseriate, linear, acuminate, usually with four nuclei, but sometimes with only two large ones, producing a spurious uniseptate appearance, colourless, 0·0003 to 0·0004 inch long.

227. S. PHÆOSTROMA, D. R. and M.; Fl. Alg. t. xxvi. f. 2. TAB. LVII. fig. 12, sporidia, × 450. Sporidia triseptate, colourless, or almost so, at each end, clear brown in the middle, with or without nuclei, 0·0014 to 0·0016 inch long. This plant is the *S. tristis* β of the 'English Flora.'

DIV. 18. VILLOSÆ.

228. S. SCABRA, n. s. TAB. LVII. fig. 13, sporidia, × 325. Sporidia biseriate, fusiform, constricted in the middle, with many (usually 6) nuclei, colourless, 0·0012 to 0·0014 inch long. Perithecia very hairy, seated on a dense subiculum, *erumpent*. On furze, Weybridge, Oct. 1857. The fruit is like that of *S. macrotricha*, B. and Br.

229. S. CANESCENS, Pers.; Fr. S. M. ii. p. 448. TAB. LVII. fig. 14, sporidia, × 450. Sporidia colourless, straight or curved, subacuminate, sometimes more pointed at one end than at the other, 0·0011 to 0·0014 inch long. See observations on the next plant.

230. S. RACODIUM, Pers.; Fr. S. M. ii. p. 449. TAB. LVII. fig. 15, sporidia, × 220. Sporidia biseriate, in the early state (as in the right-hand sporidium) not distinguishable from the fruit of *S. hirsuta*, eventually pale brown, and 7-septate, 0·002

to 0·0026 inch long. I suspect that the sporidia of *S. hirsuta*, and perhaps also those of *Sphæria ovina* and *Sphæria canescens*, are multiseptate when perfect.

231. S. OVINA, Pers.; Fr. S. M. ii. p. 446. Fructification not distinct from that of *S. hirsuta* (*post*). I have found, however, on one or two occasions specimens which I believe to be *S. ovina*, in which the sporidia exhibit under the microscope a peculiar pink tinge, each sporidium being also furnished with a clear, round, colourless spot. TAB. LVII. fig. 16, represents the fruit of this form × 325 diams.

232. S. CÆSIA, Carm. TAB. LVII. fig. 17, ascus with sporidia highly magnified. Sporidia (? always) uniseriate, colourless, elliptical, or subpyriform, about 0·0002 inch long. Perithecia white, very hairy. This specimen is marked "*S. ovina* statu juniori;" but whoever so named it, had clearly not compared the fruit of the two species.

233. S. HIRSUTA, Fr. S. M. ii. p. 449. TAB. LVII. fig. 18, ascus with sporidia, × 220. Sporidia biseriate or crowded, pale brown, long, flexuous, 0·002 to 0·0026 inch long. See remarks under *S. Racodium* (*supra*).

234. S. RHODOCHLORA, Mont. Syll. p. 227. TAB. LVII. fig. 19, ascus with sporidia, × 325. Sporidia crowded, colourless, broadly elliptical, with a reticulated appearance, but whether from the spores being multicellular, or from a number of nuclei touching one another, I cannot say; 0·0005 to 0·0007 inch long.

235. S. MUTABILIS, Sz. TAB. LVII. fig. 20, ascus with sporidia, × 325. Sporidia biseriate, colourless, curved, acuminate, endochrome 4-partite, 0·0008 inch long. Very like *S. pulvis-pyrius* to the naked eye, but under a power of 50 diams. the perithecia exhibit a very slight brownish hairiness, principally at the base.

236. S. PILOSA, Pers.; Fr. S. M. ii. p. 440. TAB. LVII. fig. 21, ascus with sporidia, × about 325. Sporidia uniseriate, colourless, elliptical, uniseptate, or with the endochrome bipartite, 0·0003 to 0·0004 inch long. A small *Sphæria*, like *S. pulvis-pyrius*, but decidedly hairy.

237. S. (CERATOSTOMA*) CHIONEA, Fr. S. M. ii. p. 446; El. ii. p. 92. TAB. LVII. fig. 22, sporidia, × 325. Sporidia elliptical or subglobose, dark brown, 0·0003 to 0·0005 inch long.

238. S. STRIGOSA, A. and S.; Fr. S. M. ii. p. 448. In my opinion not distinguishable from *S. canescens*, Pers. Fries says, "A præcedente" (that is *S. canescens*) "non facile dignoscitur."

239. S. BRASSICÆ, Kl.; Eng. Fl. p. 261. TAB. LVII. fig. 23, ascus with sporidia, × 220. Sporidia uniseriate, at first colourless, then pale brown, ultimately dark opaque brown, elliptical, with pointed ends, or lozenge-shaped, 0·0014 to 0·002 inch long. On *Brassica oleracea*. Perithecia large, hairy at the bottom, hairs white or brown; sporidia sometimes with two large nuclei, sometimes with a dark line not extending quite across the sporidium.

240. S. PULVINULUS, Berk. TAB. LVII. fig. 24, sporidia, × 325. Sporidia irregular in shape, multiseptate, ? multicellular, very dark brown, varying much in size, from

* CERATOSTOMA, Fr. Obs. Perithecium membranaceous, soft; ostiolum subulato-rostrate, with a penicillate apex. Nucleus gelatinous, asci soon dissolving (in some species not yet discovered); spores simple, erumpent, surrounding the apex of the perithecium.

0·0010 to 0·0014 inch long. Perithecia roundish, rather pulvinate, very hairy, but the hairs are very short. On wood from Swan River.

241. S. SUPERFICIALIS, n. s. TAB. LVII. fig. 25, asci with sporidia, × 420. Sporidia uniseriate, overlapping, elliptical, or subturbinate, rarely slightly curved, colourless, 2-nucleate, 0·0003 to 0·0004 inch long. Perithecia hairy, subglobose, very small, seated on a hairy subiculum. Like some other *Sphæriæ*, combining the characteristics of the *Villosæ* and *Byssisedæ*.

242. S. CAPILLIFERA, n. s. TAB. LVII. fig. 26, ascus with sporidia, × 325. Sporidia uniseriate, slightly overlapping, rather dark brown, 1–2 nucleate, broadly elliptical, 0·0003 to 0·0004 inch long. Perithecia globose, clothed with very short, rather stiff black hairs, seated on a pale subiculum, and furnished with a mammillate ostiolum. *Quære*, if distinct from *S. crinita*, Pers.

Div. 19. DENUDATÆ.

243. S. INSPERSA, Berk. TAB. LVII. fig. 27, ascus with sporidia, × 325. Sporidia mostly (? always) uniseriate, colourless, subhyaline, elliptico-acuminate, 0·0005 to 0·0006 inch long. On wood from Swan River. Not distinguishable from *S. pulvis-pyrius*, except by the sporidia.

244. S. RHODOMPHALOS, Berk. TAB. LVII. fig. 28, ascus with sporidia, and free sporidia, × 325. Sporidia biseriate, colourless or greenish, curved, subfusiform, uniseptate or with a bipartite endochrome, 0·0007 to 0·0008 inch long. On wood. Perithecia globose, with a distinct red circle round the ostiolum, which is frequently slightly depressed. Sporidia sometimes slightly constricted at the division, and with a nucleus in each partition, as in the right-hand figures.

245. S. BOMBARDA, Batsch; Fr. S. M. ii. p. 456. TAB. LVII. fig. 29, sporidia, × 325. Sporidia crowded, colourless, intertwined, 0·0016 to 0·0020 inch long, but very variable, frequently, if not usually, with a division in the middle. Apparently varying much in the length of the ostiolum. I have seen once or twice a bead-like appearance in the sporidia, arising from the breaking-up of the endochrome into divisions. The fruit of this plant should be particularly observed, as I suspect it may sometimes be multiseptate, as in *S. Racodium, corticis*, &c.

246. S. MORIFORMIS, Tode; Fr. S. M. ii. p. 458; El. ii. p. 94. TAB. LVII. fig. 30, ascus with sporidia, and free sporidia, × 325. Sporidia crowded, uniseptate, colourless, or with a greenish tinge, linear, but slightly curved; endochrome usually granular, sometimes nucleate; asci usually broad as in the figure, but sometimes more elongated.

247. S. PUSTULA, n. s. TAB. LVII. fig. 31, ascus with sporidia, × 325. Sporidia biseriate, colourless, or greenish, subelliptical, but slightly curved, 0·0008 to 0·001 inch long; endochrome bipartite. On wood. Very like *S. pulvis-pyrius*, except in the sporidia. Bungay, Mr. Stock.

248. S. PULVIS-PYRIUS, Pers.; Fr. S. M. ii. p. 458. TAB. LVII. fig. 32, ascus with sporidia, and a free sporidium, × 325. Sporidia straight, or very slightly curved, triseptate, slightly constricted at the septa, pale brown, 0·0005 inch long. In the 'Introduction

to Cryptogamic Botany,' p. 281, Mr. Berkeley figures the sporidia of *S. pulvis-pyrius* with as many as five septa, and of a more elongated form than in my figure. In all the specimens (and they are very numerous) which I have examined, I have never found more than three septa, nor have I ever seen the sporidia so elongated as in Mr. Berkeley's figure. Mr. Berkeley himself mentions the sporidia as being *tri*septate in 'Ann. and Mag. of Nat. Hist.' ser. 2. vol. vii. p. 189.

249. S. CONGLOBATA, Fr. S. M. ii. p. 414. TAB. LVII. fig. 33, ascus with sporidia, and free sporidia, × 325. The specimens of this *Sphæria* in Hook. herb. show clearly that this species is only a crowded, subcuticular, erumpent form of *S. pulvis-pyrius*. Some of the perithecia are bursting transversely, some longitudinally, and others form cæspitose masses; others again have the ordinary scattered habit of *S. pulvis-pyrius*. They form a very instructive series of specimens.

250. S. DIOICA, Fr. S. M. The specimens of this plant in Hook. herb. show clearly that (like *S. conglobata*) this species is only a subcuticular form of *S. pulvis-pyrius*.

251. S. MOROIDES. n. s. Tab. LVII. fig. 34, ascus with sporidia, and free sporidia, × 325. Sporidia biseriate, greenish brown at first, eventually brown, subhyaline, elliptical, 0·0004 to 0·0005 inch long. Perithecia rugose, small, like very small specimens of *S. moriformis*, from which species the present differs altogether in the nature of its sporidia.

252. S. PLATEATA, Pers. in litt. TAB. LVII. fig. 35, ascus with sporidia, × 325. Sporidia crowded, yellowish brown, multipartite, subelliptical, 0·0008 to 0·0010 inch long. On wood. Very like *S. pulvis-pyrius*, except in the sporidia—possibly only a small form of *S. Spartii*, Nees, which latter does not differ essentially from *S. elongata*, Fr.

253. S. SPERMOIDES, Hoffm.; Fr. S. M. ii. p. 457. TAB. LVII. fig. 36, ascus with sporidia, and free sporidia, × 325. Sporidia biseriate, colourless, curved, endochrome sometimes bipartite, 0·0008 inch long.

254. S. MAMMÆFORMIS, Pers.; Fr. S. M. ii. p. 455. TAB. LVII. fig. 37, sporidia, × 450. Sporidia dark clear brown, subcymbiform, varying much in size, from 0·0008 to 0·0016 inch long.

255. S. STERCORARIA, Sow.; Fr. S. M. ii. p. 455. TAB. LVII. fig. 38, ascus with sporidia, × 220. Sporidia uniseriate, brown, eventually quite opaque, at first colourless, elliptical, or almond-shaped, 0·0016 to 0·002 inch long.

256. S. STERCORARIA, Sow. var. ? I subjoin here a description of a *Sphæria* which I have found growing on horse-dung, and which is probably the same species as the last, notwithstanding its smaller sporidia and curious ostiola. Perithecia solitary, or few together; ostiola formed of a number of processes arranged in a penicillate manner, each consisting of a single row of irregularly-shaped cells, the upper cell being pointed. Sporidia mostly uniseriate, but sometimes biseriate, greenish at first, then darker, probably eventually black, elliptical, 0·0010 inch long. TAB. LVII. fig. 39 (*a*) represents an ostiolum broken off, × 325 diameters, and fig. 39 (*b*), an ascus with sporidia similarly magnified.

257. S. STERCORARIA, Fr. S. M. ii. p. 455; *S. stercoris*, El. ii. p. 104. TAB. LVII. fig 40, sporidia, × 325. Sporidia biseriate, dark opaque rich brown, consisting of four

joints (? at first continuous), which frequently separate when the sporidia escape from the ascus, 0·0018 inch long.

258. S. BIFORMIS, Sz., non Fries. TAB. LVII. fig. 41, fruit, × 325. I could find no asci. The perithecia are filled with balloon-shaped bodies, with granular contents, colourless, and of irregular size. There is a reddish tinge on the upper part of many of the perithecia, as in *S. rhodomphalos*, Berk. If the plant be a *Sphæria*, it would belong to the present division, but I am doubtful as to the existence of asci.

259. S. VERRUCOSA, Grev.; Fr. Index Alphabeticus=*S. moriformis*, Tode.

260. S. PULVERACEA, Ehrh.; Fr. S. M. ii. p. 459. TAB. LVII. fig. 42, ascus with sporidia, × 325. Sporidia uniseriate, clear dark brown, elliptical, subglobose, or subturbinate, 0·0003 to 0·0004 inch long.

261. S. SORDARIA, Fr. S. M. ii. 458; El. ii. p. 94. TAB. LVII. fig. 43, ascus with sporidia, × 325. Sporidia uniseriate, dark brown, elliptical, 0·0006 to 0·0007 inch long.

262. S. OBDUCENS, Schum.=*S. plateata*, Pers. *supra*.

263. S. POMIFORMIS, P.=*S. pulvis-pyrius*.

264. S. (NECTRIA) PEZIZA, Tode; Fr. S. M. ii. p. 452; El. ii. p. 92. TAB. LVII. fig. 44, sporidia, × 450. Sporidia elliptical, uniseptate (or with the endochrome bipartite), colourless, 0·0004 to 0·0005 inch long. Perithecia fawn-coloured or brown.

265. S. (NECTRIA) SANGUINEA. TAB. LVII. fig. 45, ascus with sporidia, × 325. Sporidia elliptical, colourless, uniseriate or overlapping, uniseptate, 0·0004 to 0·0005 inch long. Fig. 46 represents sporidia of the same species, × 420, at a more advanced period, after the asci have become dissolved.

266. S. (NECTRIA) EPISPHÆRIA, Tode; Fr. S. M. ii. p. 454; El. ii. p. 93. TAB. LVII. fig. 47, sporidia, × highly. Sporidia uniseriate, or overlapping, colourless, elliptical, acuminate or round at the ends; endochrome bipartite, or with two nuclei, 0·0002 to 0·0004 inch long.

267. S. RUBICOLA, n. s. TAB. LVII. fig. 48, sporidia, × 420. Sporidia biseriate, colourless, subcymbiform, or narrowly almond-shaped, with 2 or 4 nuclei, sometimes with the endochrome divided into two parts as in the lower figure, 0·0006 to 0·0007 inch long. Perithecia small, globose, or subglobose, with a mammillate ostiolum; when viewed with a strong lens, they are seen to be closely surrounded with stiff, dark-scattered hairs, sometimes springing from the perithecia, and similar hairs cover the bark where no perithecia are visible. On bramble, Weybridge, October 1857. Almost as nearly allied to the *Villosæ* as to the *Denudatæ*, but perhaps belonging to the latter by preference.

268. S. (GIBBERA *) VACCINII, Sow. t. 373. f. 1; Engl. Flora, vol. v. pt. 2. p. 254. TAB. LVIII. fig. 49, ascus with sporidia, × 325. Sporidia uniseriate, overlapping, almost colourless, but yellow in a mass, almost almond-shaped, but slightly constricted in the middle, uniseptate, 0·0006 inch long, or slightly less. Arranged in Hook. herb. with the *Cæspitosæ*, but *quære*, if not more properly belonging to the *Denudatæ*. It has quite the habit of *S. moriformis*.

* GIBBERA, Fr. Perithecium ceraceo-corneous, free, radiato-rimose, always closed, filled with a waxy nucleus, which is at length ejected; asci linear, fixed to the base of the perithecium.

269. S. CAUDATA, n. s. TAB. LVIII. fig. 50, ascus with sporidia, × 220. Sporidia biseriate, consisting of a pointed subelliptical brown head, and an elongated colourless tail; length of the sporidia (including the tail) 0·002 inch, of the head alone 0·0008 inch. Perithecia small, scattered, or few together, conical or subglobose, with a conical ostiolum. On rotten wood, near Twycross, Leicestershire. This *Sphæria*, communicated to me by Mr. Bloxam, is very peculiar in the form of its sporidia. The perithecia are sometimes naked, sometimes almost buried in the soft rotten wood, so that I have had great doubt as to its proper division. Its sporidia resemble those of *Podospora fimicola*, Ces., figured in 'Hedwigia,' tab 14. fig. A.

270. S. COLLABENS, n. s. TAB. LVIII. fig. 51, sporidia, × 325. Sporidia biseriate, fusiform, swollen or constricted in the middle, with several nuclei, colourless, 0·0014 to 0·0016 inch long. Perithecia subglobose, with an impressed ostiolum, but the ostiolum is often furrowed, or rimose. The perithecia and sporidia agree very nearly with those of *S. macrotricha*, B. & Br., but the perithecia have no hairs. Its habitat is wood, whilst that of *S. macrotricha* is dried leaves and beech mast. The sporidia also resemble those of *S. scabra*; but, besides being smooth, the perithecia of *S. collabens* are four times the size of those of *S. scabra*.

271. S. CURREYII, Blox. MSS. I have a *Sphæria* from Mr. Bloxam under this name, which is possibly the same as the plant last described. In Mr. Bloxam's plant, however, the sporidia rarely, if ever, exceed 0·0010 inch in length, and the contents of the perithecia have a rose-red tinge. In both this and the *Sphæria* last described, the perithecia with rimose ostiola might easily be mistaken for those of a *Hysterium*.

272. S. PULVISCULA, n. s. TAB. LVIII. fig. 52, ascus with sporidia, and free sporidia, × 325. Sporidia biseriate, curved or cymbiform, colourless or greenish, when perfect with three septa, or at least with the endochrome divided into four portions, giving an appearance of three septa; sometimes the endochrome is only once divided, and in a young state the sporidia are continuous. Length of the sporidia variable, from 0·0008 to 0·0012 inch. Perithecia very small, black, rather shining, conical or subglobose, crowded or scattered, with a minute mammillate ostiolum. This species is not distinguishable by the naked eye from *S. pulvis-pyrius*, but its fruit, as will be seen, is quite different.

Div. 20. PERTUSÆ.

273. S. PERTUSA, Pers.; Fr. S. M. ii. p. 464. TAB. LVIII. fig. 53, sporidia, × 220. Sporidia biseriate, I believe; brown, usually 4-septate, broad and curved, 0·0016 to 0·002 inch long. The specimens are not in good condition.

274. S. PICASTRA, Fr. S. M. ii. p. 463. TAB. LVIII. fig. 54, sporidia, × 220. Sporidia dark brown, multicellular, very irregular in size and shape. I suspect that this plant ought to be placed in the genus *Hendersonia**. Some of the sporidia were elongated as into a foot-stalk. There was no trace of asci.

* HENDERSONIA, Berk. Perithecium carbonaceous, subinnate, emergent, almost mouthless, bursting with a pore or irregularly. Nucleus compact, then diffluent; sporidia erect, elongate, pedicellate, multiseptate.

DIPLODIA, Fr. Sporidia clavate, uniseptate; otherwise as *Hendersonia*.

275. S. (DIPLODIA) LECYTHEA, Schwein.; Fr. S. M. ii. 460. TAB. LVIII. fig. 55, fruit, × 220. Spores colourless or greenish, elliptical, 0·0010 to 0·0014 inch long. Resembling externally the *Sphæriæ* of this division; but I think it is a *Diplodia*, although there is not any septum in the sporidia.

276. S. MERDARIA, Fr. El. ii. 100. TAB. LVIII. fig. 56, ascus with sporidia, × 420. Sporidia uniseriate, dark black-brown, elliptical or subglobose, 0·0003 to 0·0004 inch long. Arranged with the *Pertusæ* at Kew, but placed by Fries in the *Obtectæ*. I should rather consider it as belonging to the *Denudatæ*, judging from the specimens in the Hookerian herbarium, which are authentic. The perithecia are very small.

277. S. OLEARUM, Cast. TAB. LVIII. fig. 57, ascus with sporidia, × 325. Sporidia uniseriate or biseriate, rather pale brown, elliptical, 5-septate, with a nucleus in each septum, 0·0010 to 0·0012 inch long. Perithecia large, mammillate, subinnate. Apparently belonging to the *Pertusæ*.

278. S. ULMICOLA, n. s. TAB. LVIII. fig. 58, sporidia, × 450. Sporidia oblong, brown, uniseptate, 0·0009 inch long, slightly constricted in the middle. I could find no asci; but, there being no trace of sporophores, the asci had probably become dissolved: if ascigerous, the plant is certainly a *Sphæria*, belonging to this division. Perithecia large, globose, more than half-buried in the wood, furnished with a mammillate ostiolum, which drops off, leaving a large round aperture.

279. S. MICRASPIS, Berk. TAB. LVIII. fig. 59, represents the fruit of this plant, which is probably not a *Sphæria*, but a *Pertusaria*.

280. S. PUTAMINUM, Schwein.; Fr. S. M. 461. TAB. LVIII. figs. 60 & 61, sporidia, × 220. Sporidia uniseriate or crowded (I could not determine whether there were more than four in any of the asci), dark brown, 0·004 to 0·005 inch long. I am uncertain whether the bodies in fig. 60 are sporidia with gelatinous envelopes, or asci with a single sporidium.

281. S. CALLICARPA, n. s. TAB. LVIII. fig. 62, ascus with sporidia and free sporidia, × 325. Sporidia biseriate, very broadly fusiform, 0·0024 to 0·0030 inch long, usually slightly constricted in the middle, with a median septum, and from one to three other septa close together at each end of the sporidium; colour of the sporidia greenish, becoming brown in age; the sporidia have usually a hyaline tip at each end. Perithecia large, almost globose, with a small mammillate ostiolum. On a piece of old broken paling, the surface of which was decayed from exposure, Kidbrooke, Blackheath, March 12, 1859. Quære if distinct from *S. putaminum*, Schw.

Div. 21. PLATYSTOMÆ.

282. S. BARBARA, Fr. S. M. ii. 468. TAB. LVIII. fig. 63, ascus with sporidia, × 220. Sporidia linear, packed side by side along the whole length of the ascus, filiform, of great length, but probably breaking up into short joints, colourless. Fructification resembling that of many plants in the division or genus *Cordyceps*.

283. S. MACROSTOMA, Tode; Fr. S. M. ii. 469. TAB. LVIII. fig. 64, sporidia, × 425.

Sporidia biseriate (? sometimes uniseriate), yellow at first, eventually brown, 5-septate, rarely with 6 or more septa, frequently with longitudinal divisions, rendering the sporidia multicellular, 0·0010 to 0·0012 inch long. I have a plant from Mr. Bloxam marked *S. macrostoma*, Tode, the fruit of which is drawn in fig. 65, × 220 diameters. These sporidia attain a length of from 0·0020 to 0·0026 inch.

284. S. LIGNIARIA, Grev. Sc. Cr. Fl. t. 82. TAB. LVIII. fig. 66, ascus with sporidia, × 425. Sporidia uniseriate, at first pale brown, then dark brown, elliptico-acuminate, 0·0005 inch long. Perithecia somewhat flask-shaped, with a rugose, or rather velvety appearance, but not at all shining.

285. S. CRISTATA, Pers. = *S. crenata*, Fr. S. M. ii. 469. TAB. LVIII. fig. 67, sporidia, × 325. Sporidia almond-shaped, brown, 5–7-septate, 0·0016 to 0·0018 inch long. Quære if distinct from *S. macrostoma*, Tode.

Div. 22. CERATOSTOMÆ.

286. S. BREVIROSTRIS, Fr. S. M. ii. 474. TAB. LVIII. fig. 68, ascus with sporidia, × 325. Sporidia biseriate or uniseriate, pale brown, 0·0006 to 0·0007 inch long, elliptical, rather pointed at the ends.

287. S. LONGISPORA, n. s. TAB. LVIII. fig. 69, ascus with sporidia and free sporidia, (*a*) × 325, (*b*) × 425. Sporidia filiform, arranged side by side, very variable in length and in the number of septa, yellowish brown. Perithecia flattened, with a short ostiolum, mostly covered by the bark, excepting the tip of the ostiolum. This plant is marked in the herbarium "*S. rostellata*," but it differs from that species in the ostiolum.

288. S. (CYTISPORA) MICULA, Fr. El. ii. 101. TAB. LVIII. fig. 70, fruit, × 325. No asci; stylospores variable in length, colourless, fusiform, very pointed; ostiola fuscous. An imperfect state of some *Sphæria*.

289. S. (SPHÆROPSIS ?) PILIFERA, Fr. S. M. ii. 472. Not ascigerous, the perithecia producing only a mass of minute colourless spermatia. Remarkable for its beautifully fine, hair-like ostiolum. Perithecia small and globose.

290. S. CIRRHOSA, MS. TAB. LVIII. fig. 71, ascus with sporidia, × 425. Sporidia biseriate, elliptical, colourless, 0·0004 to 0·0005 inch long. Perithecia ovate or turbinate, quite buried in the wood, but piercing the surface by their very long, almost filiform ostiola. There is another plant marked *S. cirrhosa*, the fruit of which is shown in fig. 72, × 325 diameters. Here the sporidia are uniseriate or biseriate, pale greenish brown, elliptical, frequently with one, two, or more nuclei, 0·0003 to 0·0004 inch long. Perithecia subovate, ostiola about as long as the perithecia.

291. S. ROSTRATA, Fr. S. M. ii. 473. Sporidia biseriate, elliptical or slightly curved, 0·0003 to 0·0004 inch long, colourless, or with a tendency to pale brown. Probably not distinct from *S. cirrhosa, supra*.

Div. 23. OBTECTÆ.

292. S. EUTYPA, Fr. S. M. ii. 478. TAB. LVIII. fig. 73, ascus with sporidia and free

sporidia, × about 450. Sporidia biseriate, colourless, slightly curved, 0·0002 to 0·0003 inch long, much resembling those of *S. stigma*.

293. S. VIBRATILIS, Fr. S. M. ii. 482. Authentic specimens of this *Sphæria* exist in the Hookerian herbarium, but the fruit is not ripe. As far as I could make out, the sporidia appear to differ very little from those of *S. stellulata*. There is another *Sphæria* in the collection marked by Mr. Berkeley "*S. vibratilis*, Fr.," in which the fruit is very different. TAB. LVIII. fig. 74, represents the fruit of the latter plant, × 325, of which the following is a description:—Sporidia uniseriate or overlapping, pale brown, oblong-elliptic, but slightly curved, endochrome bipartite, 0·0005 to 0·0006 inch long.

294. S. OPERCULATA, A. & S.; Fr. S. M. ii. 479. TAB. LVIII. fig. 75, ascus with sporidia, × 325. Sporidia biseriate, brown, curved, 0·0005 inch long.

295. S. (HALONIA) CUBICULARIS *, Fr. S. M. ii. 477; El. ii. 97. TAB. LVIII. fig. 76, sporidia, × 325. Sporidia uniseriate, dark brown, elliptical, often acuminate at the ends, 0·0006 to 0·0007 inch long. Easily known by the ostiola being surrounded by a white tubercle formed from the wood. The sporidia, when free, are often surrounded by a narrow border. I have a specimen from Dr. Montagne in which the sporidia reach 0·0010 inch in length. It will be observed that the sporidia differ entirely from the generic characteristics given by Fries.

296. S. LIVIDA, Fr. S. M. ii. 479. TAB. LVIII. fig. 77, sporidia, × 325. Sporidia uniseriate, brown or yellowish-brown, normally I think triseptate, but frequently with longitudinal partial septa, and sometimes (from the breaking up of the endochrome) having a cellular appearance, elliptical, 0·0005 to 0·0007 inch long.

297. S. (SPHÆROPSIS) PRUINOSA, Fr. S. M. ii. 486. Not ascigerous, the perithecia producing only a quantity of minute curved spermatia, colourless when single, greenish brown in the mass. There are two specimens in the herbarium, one from the Scl. Suec. without fruit, and the other containing the spermatia, just mentioned.

298. S. (SPHÆROPSIS ?) OLEÆ, D.C.; Fr. S. M. ii. 489. TAB. LVIII. fig. 78, fruit, × 325. There appear to be no asci; stylospores cylindrical, colourless, rounded at the ends, 0·0008 inch long, sometimes with a border, and sometimes with nuclei.

299. S. (HERCOSPORA) RHODOSTOMA †, A. & S.; Fr. S. M. ii. 485. TAB. LVIII. fig. 79, sporidia, × 325. Sporidia dark brown when perfect, 3-septate, with constrictions at the septa, 0·0009 to 0·001 inch long. In the Kew specimens many of the sporidia are very small and uniseptate.

300. S. CERASARUM, MS. TAB. LVIII. fig. 80, sporidia, × 325. Asci long and narrow; sporidia biseriate, rather dark brown, with the endochrome bipartite, slightly constricted in the middle, acuminate at each end, 0·0009 inch long. The sporidia are

* HALONIA, Fr. Perithecium entire, covered, membranaceous; ostiolum piercing through and surrounded by a coloured heterogeneous disk; nucleus gelatinous; asci delicate; spores fusiform, pellucid, septate.

† HERCOSPORA, Fr. Perithecium discoloured, subcarbonaceous, cup-shaped, open, covered above with a web and by the bark, breaking through a heterogeneous tubercle; asci elongated, mixed with paraphyses; spores dark-coloured, opaque, septate.

drawn from the specimen marked "*a*" in the herbarium, the other marked "*S. Cerasarum, b*," not being in good condition.

301. S. TAMARISCINIS, Grev. TAB. LVIII. fig. 81, ascus with sporidia, × 325. Sporidia biseriate, rather dark brown, triseptate (or ? the endochrome 4-partite), usually slightly curved, 0·0008 inch long. Occasionally the sporidia have four septa, and rarely none. There is another plant in the herbarium, marked by Mr. Berkeley *S. Tamariscinis*, Grev., the perithecia of which contain no asci, but a multitude of minute, elliptical, turbinate or irregular yellowish spermatia, varying from 0·0005 to 0·0003 inch in length. It may be, and probably is, an imperfect state of the true *S. Tamariscinis*.

302. S. PINASTRI, Dec.; Fr. S. M. ii. p. 488. TAB. LVIII. fig. 82, ascus with sporidia, × 325. Sporidia crowded, colourless, elliptical, often acuminate at the ends, 0·0003 to 0·0004 inch long.

303. S. CLYPEATA, Nees; Fr. S. M. ii. p. 487. TAB. LVIII. fig. 83, sporidia, × 325. Sporidia uniseriate, rather dark brown, subelliptical or slightly curved, continuous, or with the endochrome divided into two, three, four, or even five portions, 0·0005 to 0·0008 inch long. Easily known by the rounded shining shield-like patches of the blackened epidermis which cover the perithecia. The sporidia are sometimes a good deal broader than those in the figure, and slightly constricted at the septa.

304. S. XYLOSTEI, Pers.; Fr. S. M. ii. p. 487; El. ii. 99. TAB. LVIII. fig. 84, sporidia, × 325. Sporidia uniseriate, dark brown, bordered, elliptical, 0·0006 to 0·0007 inch long. In many of the sporidia I observed a faint indication of a septum in the middle, but I could not satisfy myself that it really existed, or that the endochrome was truly bipartite.

305. S. (HENDERSONIA) MAMMILLANA, Fr. S. M. ii. p. 487. TAB. LVIII. fig. 85, sporidia on stylospores, × 325. Sporidia not contained in asci, but borne upon pedicels, bringing the plant within the genus *Hendersonia*, brown, triseptate, or with the endochrome 4-partite, irregular in shape and length, from 0·0005 to 0·0007 inch long. The sporidia are almost exactly the same as in *Sphæria pulvis-pyrius*.

306. S. (HENDERSONIA) HIRTA, Fr. S. M. ii. p. 483. Fruit not contained in asci, and differing in no respect from the fruit of *S. mammillana*, except perhaps in being slightly smaller. Slight variations in size, however, form no material distinction. In the 'Syst. Myc.' it is noted as a *Cytispora*, but would now be ranked with *Hendersonia*.

307. S. SEMI-IMMERSA, Grev. This plant does not differ in fructification from *S. Xylostei*, Pers., nor, as far as I can see, is it capable of being distinguished from the latter species.

308. S. OCELLATA, Fr. S. M. ii. p. 480. TAB. LVIII. fig. 86, sporidia, × highly. Sporidia biseriate, colourless, slightly curved, rounded or acute at the ends, 0·0004 inch long. This specimen is marked β, as if it were a variety, but I do not find any variety noticed in the 'Syst. Myc.'

309. S. TOMICUM, Lev. Ann. d. Sc. Nat. 1848. TAB. LVIII. fig. 87, sporidia, × 450. Sporidia uniseriate and overlapping, or biseriate, dark (almost opaque) brown, subcymbiform, frequently with two large nuclei, 0·0004 to 0·0006 inch long.

310. S. CONFORMIS, B. and Br. Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 325. pl. 11. fig. 19. TAB. LVIII. fig. 88, ascus with sporidia, × 220. Sporidia biseriate, elliptical, often slightly curved, colourless, pellucid, endochrome 4-partite, 0·0007 to 0·0008 inch long. There are not, I think, any real septa.

311. S. (HALONIA) DITOPA, Fr. S. M. ii. 381. TAB. LVIII. fig. 89, asci with sporidia and free sporidia, × 450. Sporidia crowded, very numerous, colourless, oblong, narrow, rounded or somewhat pointed at the ends, 0·0006 to 0·0007 inch long. Fries, in the 'Summa Veg. Scand.,' describes the sporidia as septate. It is possible they may sometimes be so, but I have never seen them otherwise than continuous, with a nucleate or granular endochrome. They are figured so, moreover, by Messrs. Berkeley and Broome, in Ann. and Mag. N. H. ser. 2. vol. ix. pl. 10. fig. 15*. Messrs. Berkeley and Broome, however (*l. c.*), mention Dr. Roussel's specimens of *S. ditopa* as having uniseptate sporidia.

312. S. QUADRI-NUCLEATA, n. s. TAB. LVIII. fig. 90, sporidia, × 450. Sporidia biseriate, very closely packed, colourless, narrowly oblong, pointed or rounded at the ends, each sporidium with four nuclei, 0·0006 inch long. Perithecia small, subglobose, with a mammillate ostiolum, which pierces the outer bark, making a circular hole or a rimose transverse fissure in the bark. On a stick with *S. pulvis-pyrius*, Weybridge, Surrey, September 7th, 1856.

313. S. RUBI, n. s. TAB. LVIII. fig. 91, (*a*) asci with sporidia not quite ripe, × 325; (*b*) ripe sporidia, × 450. Sporidia biseriate, colourless, each with four large nuclei, subfusiform, but wide in the centre, with the sides flexuous, and mostly elongated at each end into a hyaline mucronate appendage. Perithecia very small, punctiform, just penetrating the bark with their minute ostiola. On bramble, Weybridge, Surrey, September 12th, 1856.

314. S. INQUILINA, Wallr.; Fr. El. ii. p. 100. TAB. LVIII. fig. 92, sporidia highly magnified. Sporidia biseriate, colourless, subfusiform, constricted in the middle, 4-nucleate, 0·0004 to 0·0005 inch long. On dead stems of *Smyrnium Olusatrum*. Malling, near Lewes, August 24th, 1858. I have no doubt about the species, although the contents of the perithecia in these specimens is not black, but colourless. When examined under a lens, without extracting the contents, they appear black; but if picked out on the point of a needle, they will be found to be colourless.

315. S. ACUS, Blox. MS., n. s. TAB. LVIII. fig. 93, sporidia highly magnified. Sporidia biseriate or crowded, colourless, narrowly cylindrical, with rounded ends, or acuminate at the ends and then almond-shaped, 0·0003 to 0·0004 inch long, endochrome 2–4-partite. Perithecia small, subglobose, flattened, concealed by the epidermis, which is pierced by the sharp-pointed minute ostiola.

316. S. PHOMATOSPORA, Berk. and Br. Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 380. pl. 11. fig. 33. TAB. LVIII. fig. 94, ascus with sporidia highly magnified. Sporidia uniseriate, elliptical, colourless, 0·0003 to 0·0004 inch long, with a nucleus at each extremity, as in the spores of the genus *Phoma*.

317. S. ARGUS, Berk. and Br. Ann. and Mag. Nat. Hist. vol. ix. ser. 2. p. 322. pl. 10. fig. 9. TAB. LVIII. fig. 95, ascus with sporidia, × 220. Sporidia biseriate, straight or curved

dark olive-green, divided into two unequal parts, in the smaller of which the endochrome is 3-partite, and in the larger 3- or 4-partite. Sporidia surrounded by a gelatinous envelope, which is not always visible in the ascus, especially where the sporidia touch one another. Length of sporidia 0·0020 to 0·0024 inch. I have ventured to place this plant in the *Obtectæ*, contrary to the opinion of Messrs. Berkeley and Broome, who consider its division to be the *Subtectæ*. Very like *S. lanciformis* in the form and nature of its sporidia.

318. S. APICULATA, n. s. TAB. LVIII. fig. 96, (*a*) ascus with sporidia, × 325; (*b*) free sporidia, × 450. Sporidia uniseriate, olive-brown, straight or very slightly curved, biseptate, each furnished with a hyaline tip, which is shut off from the rest of the sporidium by one of the septa. The hyaline tip is frequently, if not generally, invisible in the ascus, owing to the overlapping of the ends of the sporidia. The sporidia are often nucleated; the endochrome is somewhat granular. Length of the sporidia 0·0010 inch. Perithecia large, subglobose, deeply buried in the wood, above the surface of which the rather wide, circular, somewhat gaping ostiolum just protrudes. On a dry, old (? deal) fence of the South-Western Railway, not far from the Weybridge Station, 1856 and 1857. A very curious plant both in habit and sporidia. The perithecia are completely and deeply buried in the wood, and are sometimes scattered, sometimes in circles or groups of as many as five together. The perithecia seem eventually to throw off the wood above the ostiola, leaving deep depressions in the surface of the wood.

319. S. APPENDICULOSA, Berk. and Br. Ann. and Mag. Nat. Hist. ser. 2. vol. vii. p. 189. TAB. LVIII. fig. 97, sporidia, × 325. Sporidia uniseriate, overlapping, colourless, subfusiform, with a caudate appendage, 0·001 inch long with the appendage.

320. S. SIPARIA, Berk. and Br. Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 321. pl. 9. fig. 8. TAB. LVIII. fig. 98, ascus with sporidia, × 220. Sporidia biseriate, at first golden-yellow, eventually clear brown, 0·0020 to 0·0024 inch long, without measuring the outer gelatinous envelope in which they are enclosed, and which disappears as the sporidia advance in age.

321. S. (MASSARIA) AMBLYOSPORA *, Berk. and Br. *l. c.* p. 322. pl. 10. fig. 10. TAB. LIX. fig. 99, ascus with sporidia and a free sporidium, × 220. Sporidia biseriate, greenish-brown, eventually brown, biseptate, lageniform, the apicular cell rather lighter-coloured than the others, 0·002 to 0·0024 inch long, without measuring the gelatinous coat in which they are enveloped. In describing the fruit of this plant, I have adopted the name used by Messrs. Berkeley and Broome, who described it as a new species. I am quite convinced, however, that *S. amblyospora*, Berk. and Broome, is the *Sphæria fœdans* of the 'Syst. Myc.,' the *Massaria fœdans* of the 'Summa Veg. Scand.,' and the *Splanchnonema* of Corda, in Sturm's 'Deutschland's Flora,' t. 54.

322. S. GIGASPORA, Desm. TAB. LIX. fig. 100, ascus with sporidia, × 220. Sporidia biseriate, oblong or almond-shaped, with the sides often incurved at the centre, dark

* MASSARIA, Notar. Perithecium subcarbonaceous; ostiolum papillate, attenuated. Nucleus gelatinous, filled with paraphyses and asci, which dehisce at the apex, ejecting dark septate spores immersed in gelatine, which form a dirty black stain.

brown, triseptate, or with the endochrome 4-partite, surrounded by a narrow gelatinous border. Perithecia small, conical or somewhat flattened, sometimes only just piercing the bark, sometimes protruding considerably. Sporidia ejected in vast numbers, forming wide black stains round the ostiola, 0·0026 inch long. On dead branches of (I think) maple, Blackheath Park, 1855 and 1856. This plant is the type of the genus *Saccothecium* of Fries, the characters of which seem to me most unsatisfactory, and to have been founded upon imperfect microscopical observations.

323. S. INQUINANS, Tode; Fr. S. M. ii. p. 486. TAB. LIX. fig. 101, sporidia, × 220. Sporidia dark brown, with a granular and nucleated endochrome, very variable in size, sometimes reaching 0·0030 inch in length.

324. S. BUFONIA, Berk. and Br. Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 323. pl. 10. fig. 13. TAB. LIX. fig. 102, ascus with sporidia, × 220. Sporidia uniseriate, clear rich brown, eventually becoming very dark brown, oblong, constricted in the middle, surrounded by a broad gelatinous envelope, 0·0008 to 0·0011 inch long. Not uncommon on dead branches of oak. One of the finest *Sphæriæ* in point of fructification. The figure in the 'Annals' conveys no idea of the beauty of the sporidia, being hardly more than an outline.

325. S. FUSCELLA, Berk. and Br. *l. c.* p. 325. pl. 11. fig. 20. TAB. LIX. fig. 103, ascus with sporidia, × 325. Sporidia uniseriate, colourless at first, eventually pale brown, oblong-elliptic, rarely very slightly curved, or incurved or constricted in the middle, 0·0007 inch long; endochrome 4-partite, giving a triseptate appearance.

326. S. TILIÆ, Pers. Syn. p. 84; Fr. S. M. ii. p. 485. TAB. LIX. fig. 104, sporidia, × 325. Sporidia biseriate, dark brown, lageniform, uniseptate, 0·0018 inch long, without measuring the gelatinous coat in which each sporidium is enveloped. I am not quite certain whether this plant is the true *S. Tiliæ* of Persoon. It is not uncommon, and cannot be mistaken for any other if attention be paid to its fruit, and to its growing upon lime. In fig. 105 and fig. 106 I have represented asci with the sporidia and free sporidia of a *Sphæria* on lime, communicated to me by Mr. Berkeley as *S. Tiliæ* of Mougeot and Nestler. The sporidia of this plant are uniseriate or biseriate, colourless, acuminato-elliptical, 0·0006 inch long, with bipartite endochrome.

327. S. ASHWELLIANA, n. s. TAB. LIX. fig. 107, ascus with sporidia, × 220. Sporidia uniseriate or biseriate, colourless or greenish, elliptical, but mostly pointed at each end and slightly constricted in the middle, 1–4-septate, hyaline, 0·0010 to 0·0014 inch long. On small branches of fir, Weybridge, Surrey, October 1857. Perithecia? The specimens were in bad condition, and I have some doubt whether the plant belongs to the *Obtectæ* or the *Circinatæ*; but I know of no species in either of those divisions with similar fruit, and have therefore proposed the present as a new one.

Div. 24. OBTURATÆ.

328. S. MILLEPUNCTATA, Grev. I cannot distinguish this plant from *S. corticis*, Sow.; and this seems to be Fries' opinion (see 'Elenchus,' ii. 98).

329. S. FRAXINI, Fr. This also seems to me to be identical with *S. corticis*, Sow.

330. S. CORTICIS, Sow. t. 372. f. 5; Fr. S. M. ii. 481; El. ii. 98. TAB. LIX. fig. 108, ascus with sporidia and free sporidia, × 325. Sporidia biseriate or crowded, pale brown, but of rather a rich colour, curved, variable in length, but in good ripe specimens about 0·0008 inch long. Intermixed with the *Sphæria*, and exactly resembling it, I find other perithecia containing the bodies on the right of the figure, which were of a darker brown, and 3–5- or 7-septate, varying from 0·0006 to 0·0012 inch long, which I doubt not are perfect, free sporidia, the asci having deliquesced.

331. S. TRANSVERSALIS, Schw.; Fr. El. ii. 94. TAB. LIX. fig. 109, ascus with sporidia, × 325. Sporidia uniseriate, dark brown, elliptical, subglobose, or even quite globular, 0·0004 inch long. Arranged with the *Obturatæ*, but belonging, I think, to the *Denudatæ*, and in my opinion not distinct from *S. pulveracea*, Ehrh. Fries (El. ii. 94) considers *S. transversalis* identical with *S. myriocarpa*. I have seen no specimens of the latter *Sphæria* in fruit, but it is possibly not distinct from *S. pulveracea*.

332. S. JUGLANDIS, Fr. S. M. ii. 493. TAB. LIX. fig. 110, sporidia, × highly. Sporidia biseriate, colourless, almond-shaped or narrowly elliptical, frequently curved, usually 4-nucleate, sometimes with the endochrome bipartite (? sometimes 5-partite), 0·0004 to 0·0005 inch long. I believe this to be the perfect form of *S. Juglandis*, Fr. The Hookerian herbarium contains another form, next described, which is an authentic specimen from the Scl. Suec., but which is not a true *Sphæria*, and is perhaps an imperfect form of the species just described.

333. S. JUGLANDIS, Fr. S. M. ii. 493. TAB. LIX. fig. 111, fruit, × highly. No asci; but the perithecia contain a quantity of minute, colourless or slightly yellowish, narrowly almond-shaped stylospores, borne on rather long pedicels, which, when broken off, look like the fruit of a *Cytispora*, but are in reality only the fulcra of the stylospores. Stylospores 0·0002 to 0·0003 inch long, sometimes with two nuclei or with a bipartite endochrome.

334. S. INSPERSA, Sz. TAB. LIX. fig. 112, ascus with sporidia, × 325. Sporidia biseriate or crowded, with the endochrome 4-partite, dark brown, constricted at the partitions, usually rather more pointed at one end than at the other, 0·0010 to 0·0011 inch long. Not to be confounded with *S. inspersa*, Berk., which has very different sporidia.

335. S. (SPHÆROPSIS ?) UBERIFORMIS, Fr. S. M. ii. 491. TAB. LIX. fig. 113, fruit, × 325. I could find no asci. Perithecia filled with elongate, acuminate, colourless spores, having the endochrome 4-partite, 0·0005 to 0·0008 inch long. Easily known by its udder-shaped perithecia; but it is, perhaps, not a true *Sphæria*.

336. S. (HENDERSONIA ?) OPPILATA, Fr. S. M. ii. 493. TAB. LIX. fig. 114, fruit highly magnified. No asci. Perithecia filled with almond-shaped colourless spores with bipartite endochrome, 0·0003 to 0·0004 inch long. This would be a *Sphæria* or a *Hendersonia*, according to whether it has or has not asci.

337. S. (HENDERSONIA) PALINA, Fr. S. M. ii. 494. The fruit of this plant is not distinguishable from that of *S. oppilata*, but the spores rarely exceed 0·0003 inch in length. The endochrome also is sometimes continuous instead of bipartite, and the spores are borne on long peduncles, as in *S. Juglandis*, but which I did not observe in *S. oppilata*.

338. S. (Hendersonia) strobilina, Holl & Schm. The fruit in this species is just like that of *S. palina*, but larger, being 0·0005 inch long.

339. S. Loniceræ, Fr. S. M. ii. 492. Tab. LIX. fig. 115, ascus with sporidia, × 325. Sporidia uniseriate, colourless, or with a greenish tinge, elliptical, 0·0004 to 0·0006 inch long; endochrome tripartite.

340. S. pisiformis, Pers. *in lit.* Incorrectly arranged in this division; it belongs to the *Obvallatæ*, and is probably the Sphæropsoid form of *S. leiphæmia*.

341. S. (Sphæropsis) obtusata, Fr. S. M. ii. 495. Spermatia colourless, curved, about 0·0004 inch long.

342. S. (Hendersonia) Syringæ, Fr. S. M. ii. 492. Tab. LIX. fig. 116, fruit, × 325. Fruit borne on stalks, not contained in asci, irregular in size and shape, dark brown. In the later arrangements it would be placed in the genus *Hendersonia*, or perhaps in *Diplodia*.

Div. 25. Subtectæ.

343. S. (Diplodia) Ilicis, Fr. S. M. ii. 501. Tab. LIX. fig. 117, fruit, × 325. No asci. Fruit borne, I think, on short peduncles, elliptical, oblong, subglobose or turbinate, irregular in size and shape, almost colourless, but with a yellowish-green tinge.

344. S. (Diplodia) Sarmentorum, Fr. S. M. ii. 498. Tab. LIX. fig. 118, fruit, × 325. No asci. Fruit borne on peduncles, dark brown, uniseptate when ripe, with sometimes a large globose nucleus in each division, irregular in size, about 0·0007 inch long on an average.

345. S. (Sphæropsis ?) atrovirens, β. Buxi, Fr. No asci. Stylospores exactly like those of *S. Juglandis*, but not septate or nucleate. Peduncles rather long.

346. S. epidermidis, Fr. S. M. ii. 499. Tab. LIX. fig. 119, ascus with sporidia, × 325. Sporidia uniseriate or slightly overlapping, rather light brown, elliptical, uniseptate, or with the endochrome bipartite, hardly 0·0004 inch long. There is another plant in the herbarium, marked by Mr. Berkeley *S. epidermidis*, Fr., in which the perithecia have no asci, but contain a mass of fusiform, straight or slightly curved, yellow spores, faintly 1-, 2-, or 3-septate, or 1-, 2-, or 3-nucleate, measuring from 0·0002 to 0·0006 inch. These spores are drawn to the right of the ascus in fig. 119.

347. S. Rusci, Wallr. Tab. LIX. fig. 120, sporidia, × 450. Sporidia straight or curved, normally 4-septate, occasionally 3- or 5-septate, constricted at the septa, each division usually with one or more nuclei; colour of the sporidia a clear yellowish brown; length 0·0006 to 0·0010 inch.

348. S. seriata, n. s. Tab. LIX. fig. 121, sporidia, × 325. Sporidia biseriate, colourless, slightly curved, with many nuclei, fusiform, 0·0008 inch long. Perithecia small, globose, bursting in somewhat parallel lines through the surface of the wood.

Div. 26. Caulicolæ.

349. S. Doliolum, Pers.; Fr. S. M. ii. 509. Tab. LIX. fig. 122, sporidia, × 325. Sporidia biseriate, or uniseriate and overlapping, yellowish brown, curved, or almost straight, 3–5-septate, constricted at the septa, 0·001 inch long, or rather more.

350. S. Dematium, Pers.; Fr. S. M. ii. 505. Tab. LIX. fig. 123, sporidia, × 325. This plant was not, I think, quite ripe. Most of the sporidia were curved and colourless, as in the right-hand one of the three; but septa were just visible in one or two of the sporidia, and nuclei in others. I have little doubt that the sporidia, when ripe, are brown or yellowish, and three or four times (or even more) septate. There are three specimens of this species in the herbarium, marked *α*, *β*, and *γ*. The above description is from (*α*); I could find no fruit in (*β*) and (*γ*).

351. S. Arundinis, Fr. S. M. ii. 510. Tab. LIX. fig. 124, sporidia, × 425. Sporidia biseriate, at first yellowish, then brown, 3–5-septate, sometimes with six septa, slightly curved, somewhat pointed at each end, frequently with nuclei in the septa, 0·0010 to 0·0016 inch long.

352. S. (Sphæropsis ?) Corni Suecicæ. Not a true *Sphæria*. Perithecia producing only minute, straight, cylindrical, colourless spermatia, 0·0002 inch long.

353. S. (Sphæropsis ?) acuta, Hoffm. I believe *S. acuta*, Hoffm., to be only a sphæropsoid state of some common Caulicolous species; but whether of *S. complanata* or *S. herbarum*, or of any other species, it is impossible to say.

354. S. complanata, Tode. It is difficult, without authentic specimens, to be certain as to the true *S. complanata* of Tode. The sporidia shown in Tab. LIX. fig. 125, × 325 diameters, are those which I have always supposed to belong to the true species. These sporidia are biseriate, or uniseriate and overlapping, colourless, or yellow, 2–4-partite, sometimes apparently triseptate; they vary at different ages of the plant; (*a*) represents the young state, (*b*) the more advanced; (*c*) is a form equally common (in the same specimens) with (*b*); (*d*) is, I think, the perfect and typical form of fruit.

355. S. coniformis, Fr. S. M. ii. 508. Tab. LIX. fig. 126, sporidia, × 325. Sporidia biseriate, yellow, slightly curved, 5–11-partite, varying much in length, as is shown by the figure. See the remarks on the fruit of this species as compared with *S. acuminata*, Sow., in Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 328.

356. S. imberbis, MS. This specimen contains three different plants—1st, *Sphæria herbarum*; 2ndly, perithecia containing curved colourless stylospores, like the spermatia of *S. verrucæformis*; 3rdly, perithecia containing minute, colourless, straight, or slightly curved cylindrical spermatia or stylospores.

357. S. phæosticta, Berk. Tab. LIX. fig. 127, ascus with sporidia and free sporidia, × 325. Sporidia uniseriate or biseriate, very dark brown, subcymbiform, 0·0004 inch long. Perithecia minute, punctiform. On *Hierochloe Brunonis*, from the Auckland Group and Campbell Islands.

358. S. (Hendersonia) Zeæ, Schwein.; Fr. S. M. ii. 527. Tab. LIX. fig. 128, fruit, × 325. No asci. Perithecia containing the narrowly cylindrical or irregularly-shaped bodies shown in fig. 128. These bodies have a bipartite endochrome, and are rather dark brown. On culms of *Zea Mays*. If there be no asci, this plant is a *Hendersonia*; but the asci may have dissolved, and then it would be a *Sphæria*. There is another specimen in the herbarium marked *S. Zeæ*, Sz., which is, I think, identical with *Hendersonia arcus*, B. & Br.

359. S. PELLITA, Fr. S. M. ii. 503. TAB. LIX. fig. 129, sporidia, × 325. Sporidia, × 325. Asci clavate; sporidia crowded, multiseptate, fusiform, yellow, with a swollen joint, which is sometimes the third, sometimes the fourth from the end, 0·0015 to 0·0016 inch long. There is another specimen in the herbarium, marked *S. pellita*, Fr., in which the fruit is not distinguishable from that of *S. coniformis*, *supra*.

360. S. NIGRELLA, Fr. S. M. ii. 512. TAB. LIX. fig. 130, sporidia, × 325. Sporidia biseriate, colourless or greenish, fusiform, 0·0008 inch long; endochrome bipartite.

361. S. PISI, Sow.; Fr. S. M. ii. 509. TAB. LX. fig. 131, ascus with sporidia, × 325. Sporidia biseriate, yellow or yellowish brown, multicellular, 0·001 inch long. On *Asparagus officinalis*. I think not distinct from *S. herbarum*.

362. S. ASTRAGALI, n. s. TAB. LIX. fig. 132, sporidia, × 325. Sporidia biseriate, subfusiform, varying at the extremities from acute to obtuse, colourless; endochrome unipartite, 0·0006 to 0·0008 inch long. Perithecia minute, globose, shining, half-hidden by the epidermis. On petioles of *Astragalus*. Dr. Richardson, Arctic expedition, 1827 (? = *S. nigrella*, Fr.).

363. S. ACUMINATA, Sow.; Fr. S. M. ii. 506. TAB. LIX. fig. 133, ascus with sporidia, and a broken ascus with sporidia protruding, × 325. Sporidia filiform, almost as long as the ascus, yellowish brown in a mass, but of a very pale colour when separate, arranged side by side. See the remarks of Mr. Berkeley on the fructification of this species in Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 328. I could not clearly make out any septa in the specimens in the Hookerian herbarium, although some of the asci when full of sporidia seemed marked with very faint transverse lines. Mr. Berkeley says there are about twenty articulations.

364. S. CARICINA, Desm. The perithecia contain only minute, acuminate, colourless spermatia, without septa or nuclei, just like those of *S. Juglandis*, but slightly longer.

365. S. (DIPLODIA) CALVESCENS, Fr. S. S. 401. This specimen has perithecia containing the brown uniseptate fruit, not contained in asci, shown in TAB. LIX. fig. 134, × 325. It should be classed, I think, with *Diplodia*. In company with this plant are some other perithecia with asci and sporidia, the latter differing little, if at all, from the sporidia of *S. herbarum*.

366. S. CLIVENSIS, Berk. & Br. Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 879. pl. 11. fig. 29. TAB. LIX. fig. 135, ascus with sporidia, × 220. Sporidia biseriate, dark brown, oblong or slightly curved, triseptate, constricted at the septa, 0·0006 to 0·0008 inch long.

367. S. RUBELLA, Pers.; Fr. S. M. ii. 506. TAB. LIX. fig. 136, ascus with sporidia, × 220. Sporidia filiform, quite filling the ascus, and of the same length, arranged side by side, colourless when detached, but yellowish brown in the mass. Length of the asci variable, about 0·007 to 0·008 inch long.

368. S. HELENÆ, n. s. TAB. LIX. fig. 137, sporidia, × 325. Sporidia uniseriate, overlapping, brownish yellow, curved, 3-septate, or rarely 4-septate, or with the endochrome 4-partite, or rarely 5-partite, 0·001 inch long. Perithecia conical, truncate. This species is very near *S. complanata*, Tode, but many of the perithecia are in the

form of truncated cones. It may, however, be merely a variety of the latter, and I propose it with doubt as a new species.

369. S. HERBARUM, Fr. S. M. ii. 511. TAB. LIX. fig. 138, asci with sporidia, × 220. Sporidia oblong-elliptic, at first yellow, eventually brown, multicellular, varying in size and in the mode of arrangement in the asci, as will be seen by referring to the figures.

Div. 27. FOLIICOLÆ.

370. S. RHIZOMORPHÆ, Kunze. TAB. LIX. fig. 139, ascus with sporidia and free sporidia, × 325. Sporidia crowded, brown, of rather a dark colour, but clear and transparent, 0·0012 to 0·0016 inch long. From Surinam.

371. S. TUBÆFORMIS, Tode; Fr. S. M. ii. 516. TAB. LIX. fig. 140, ascus with sporidia, × 325. Sporidia biseriate or crowded, colourless, or in age with a dirty-brown tinge, elliptical or subcymbiform, 0·0005 inch long.

372. S. (SPHÆROPSIS ?) MACULÆFORMIS, Pers.; Fr. S. M. ii. 524. This is not a true *Sphæria*. The perithecia produce only exceedingly minute, staff-like, colourless spermatia, not so much as 0·0002 inch long.

373. S. (SPHÆROPSIS ?) OLEÆ, D.C.; Fr. S. M. ii. 489. No asci. TAB. LIX. fig. 141, fruit, × 325. Fruit consisting of subcylindrical, colourless, highly refractive spores, 0·0007 to 0·0009 inch long. I could not make out the mode of attachment; a few of the spores had a sort of string, as in the right-hand figure; but I am doubtful whether it were a true peduncle, or a string of a kind of mucus in which the spores were imbedded. This appears to be the same plant as No. 298 in the *Obtectæ*.

374. S. (SPHÆROPSIS ?) LEPTIDEA, Fr. S. M. ii. 522. Not a true *Sphæria*. Fruit consisting of minute, colourless, straight or very slightly curved, subcylindrical spores, barely 0·0002 inch long.

375. S. (SPHÆROPSIS ?) DUPLEX, var. NARDI, Fr. S. M. ii. 520. Not a true *Sphæria*. Fruit the same as in *S. leptidea*, Fr.

376. S. ? PUNCTIFORMIS, Pers.; Fr. S. S. 86. The perithecia contain colourless saccate bodies, grouped together as in TAB. LIX. fig. 142; but whether they are spores or imperfect asci I cannot say, probably the latter.

377. S. (SPHÆROPSIS) HEDERÆ, Sow.; Fr. S. M. ii. 521. Fruit consisting of colourless cylindrical spores, 0·0008 to 0·001 inch long; not distinguishable from the fruit of *S. Oleæ*, D.C., excepting that the spores are rather narrower and not so refractive, and I observed no peduncles.

378. S. (SPHÆROPSIS) ÆGOPODII, Pers.; Fr. S. M. ii. 526. The fruit is the same as in *S. leptidea*, Fr., *supra*.

379. S. (DISCOSIA*) ARTOCREAS, Tode; Fr. S. S. 151; S. M. ii. 523. TAB. LIX. fig. 143, spores, × 325. The fruit consists of straw-coloured, curved, or almost straight spores, having an extremely delicate filiform appendage at each end. The average length of the spores without the appendage is 0·0007 inch. The spores are probably produced

* DISCOSIA, Lib. Phlyctid. Notar. Perithecium innate, subcarbonaceous, at length collapsed and plicate; ostiolum pierced. Spores fusiform, prolonged at each end into a filiform appendage.

in asci, which deliquesce at an early period. I can see no sufficient grounds for separating this plant and the following one from *Sphæria*.

380. S. (Discosia) alnea, Fr. S. M. ii. 520. This plant has asci; but the sporidia in the specimens in the Hookerian herbarium, which are from the Scl. Suec., are not formed.

381. S. glauco-punctata, Grev. Fl. Edin. Tab. LIX. fig. 144, sporidia, × 325. Sporidia biseriate, rather dark brown, slightly curved, but sometimes straight; endochrome 3–6- or more partite, 0·0007 inch long. On *Ruscus aculeatus*. Not distinct, I think, from *S. Rusci*, Wallr.

382. S. (Sphæropsis) palustris, Fr. *in lit.* The fruit is the same as in *S. leptidea*, Fr.

383. S. (Sphæropsis) Vincæ, Fr. *in lit.* The fruit is precisely the same in form as in *S. Hederæ, supra*. Length=0·0006 to 0·0007 inch.

384. S. setacea, Pers.; Fr. S. M. ii. 518. Tab. LIX. fig. 145, sporidia, × 450. Sporidia biseriate, colourless or greenish, arcuate, usually tapering to a point at each extremity, but sometimes (though rarely) rounded at the ends, 0·0006 inch long, apparently septate; but the apparent septum is, I think, only the line of contact of the bipartite endochrome.

Div. 28. Depazea.

385. S. (Hendersonia) cornicola, Dec.; Fr. S. M. ii. 530. Tab. LIX. fig. 146, fruit, × 325. No asci. Fruit consisting of elliptical, triseptate, pale-brown spores, 0·0004 to 0·0006 inch long, borne on long peduncles.

386. S. (Depazea*) vagans, Fr. S. M. ii. 532. No asci. The perithecia contain long filiform or fusiform bodies, precisely like those figured under *S. Juglandis*, where, however, the bodies are not spores, but peduncles. Whether this is so in the present case, I am uncertain.

387. S. (Depazea) Uvariæ, Berk. Tab. LIX. fig. 147, fruit, × 325. Fruit not contained in asci, colourless, elliptical, subglobose or subturbinate, 0·0002 to 0·0004 inch long. On leaves of *Uvaria triloba*. Spots round or irregular, brown in the centre, becoming much darker towards the edge. Perithecia very small, black.

388. S. (Depazea) fraxinicola, MS.; marked also "*Sphæria lichenoides*." Tab. LIX. fig. 148, fruit, × highly. Fruit not contained in asci, irregular in shape, being elliptical or subturbinate, or even subcymbiform, 0·0002 to 0·0003 inch long; spots round or irregular, brown, with a dark margin. Perithecia small and black.

389. S. Drymidis, Berk. Tab. LIX. fig. 149, sporidia, × 325. Sporidia biseriate, colourless, uniseptate, the two portions of unequal width, 0·0005 inch long. Perithecia small, black, seated upon quite white, somewhat impressed, margined spots. This is a true *Sphæria* with the habit of a *Depazea*. On dead leaves of *Drymis*, Island of Juan Fernandez, May 1830.

390. S. (Depazea) pallor, Berk. Ann. and Mag. Nat. Hist. series 1. vol. vi. p. 362. pl. 11. fig. 2. Tab. LIX. fig. 150, fruit, × 325. Fruit not contained in asci, colourless or with

* Depazea, Fr. Perithecium carbonaceous, subinnate, mouthless, opening in a circumscissile manner or dehiscing at the apex. Nucleus consisting of thread-like sporophores; spores acrogenous, simple.

a yellow tinge, sometimes straight, but usually more or less curved, 0·0006 to 0·0008 inch in the chord of the arc.

391. S. (Depazea) graminicola, Berk. Ann. Nat. Hist. series 1. vol. i. p. 207. Tab. LIX. fig. 151, fruit, × 325. Fruit not contained in asci, colourless, fusiform, straight or curved, 0·0008 to 0·0009 inch long; endochrome sometimes bipartite, sometimes not. I think it not improbable that this is an imperfect form of *S. graminis*, Pers.

392. S. (Depazea) Brassicæ, Pers. *in lit.* Fruit not contained in asci, similar to that of *S. leptidea*, Fr., but sometimes slightly thicker at each extremity than in the middle; spots rather large, roundish, with an irregular outline, brown in the centre, greenish towards the margin. Perithecia small, black, and numerous.

393. S. (Depazea) Dianthi, Fr. S. M. ii. 531. Fruit not contained in asci; similar to that of *S. vagans*, Fr., *supra*.

394. S. (Depazea) Pisicola, Berk. Tab. LIX. fig. 152, fruit, × 325. Fruit not contained in asci, colourless, of irregular shape, but mostly elliptical; endochrome bipartite or continuous; length from 0·0004 to 0·0005 inch. [I find a minute fungus hardly differing from this, on dead stems of *Smyrnium Olusatrum*. In my plant, however, the perithecia are not seated on an arid spot, and the fruit is rather larger and narrower, and generally more incurved at the sides, giving the spores a sort of dumb-bell shape.] Spots pale, round, margined, often confluent. Perithecia small, black.

395. S. (Depazea) Ribicola, Fr. S. M. ii. 530. Tab. LIX. fig. 153, fruit, × 325. Fruit not contained in asci, colourless, bluntly and irregularly crescent-shaped, 0·0006 to 0·0007 inch between the horns.

396. S. (Depazea) fuscella, Berk. Fruit not contained in asci; similar to that of *S. vagans*, *supra*. Spots brown, paler in the centre. Perithecia very small. On *Convolvulus arvensis*. King's Cliffe, Northamptonshire.

397. S. (Depazea) Alismatis, n. s. Tab. LIX. fig. 154, fruit, × 325. Fruit colourless, bordered, elliptical, subglobose or turbinate, with sometimes the apparent remains of a peduncle, 0·0004 to 0·0005 inch long. On *Alisma Plantago*. Suffolk, Mr. Stock. Perithecia subglobose, chestnut-coloured, at least in the dry plant.

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[*The figures refer to the numbers affixed to each Plant, and not to the pages.*]

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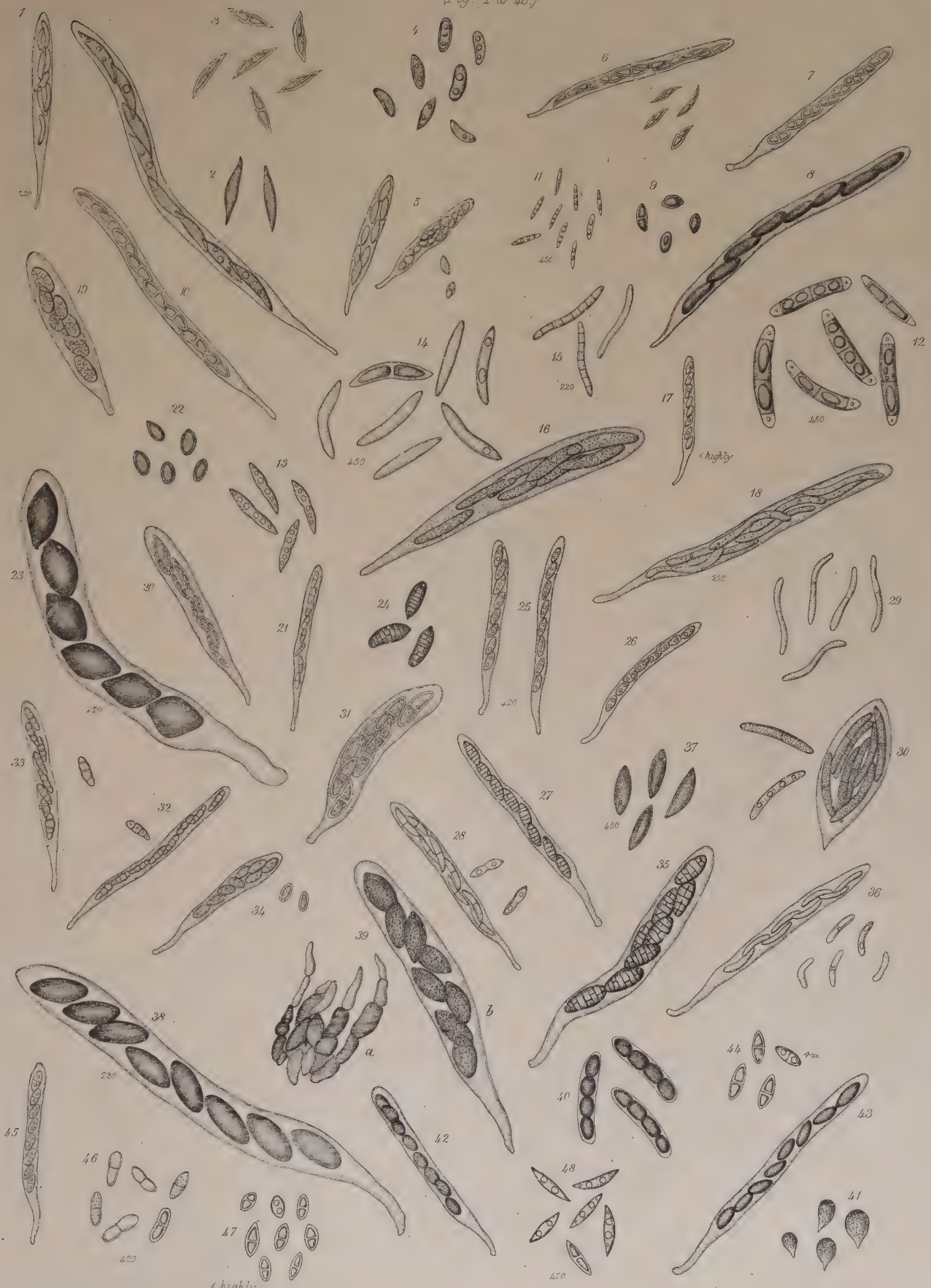
GEN SPHÆRIA.

(Figs. 1 to 48.)



F. Currey del. Tuffen West sc.

W. West imp.

All the figures magnified 325 Diameters, except where otherwise stated.

GEN. SPHÆRIA.

(Figs. 49 to 98.)

F. Currey del. Tuffen West sc.

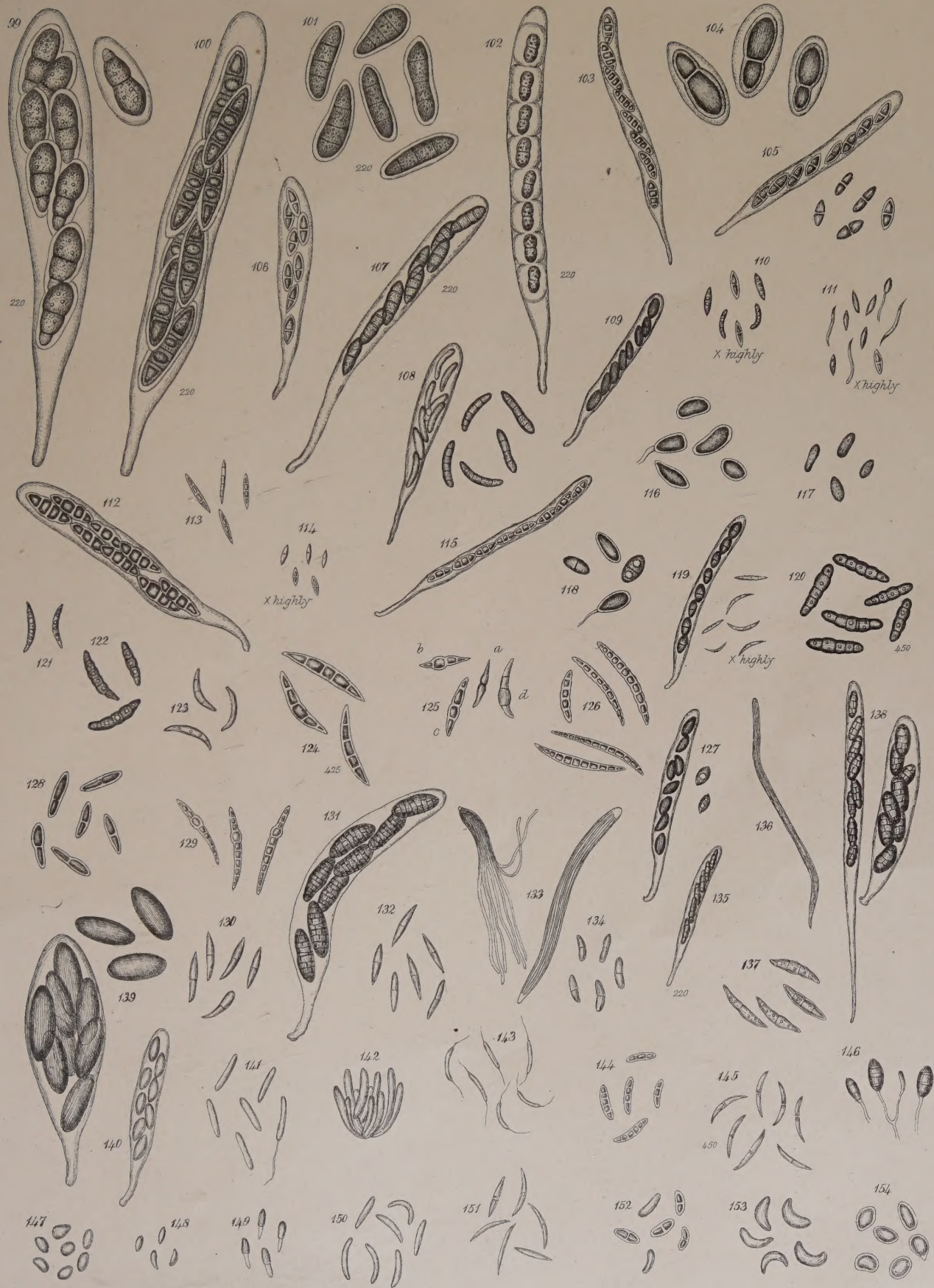
W. West imp.

All the figures magnified 325 Diameters, except where otherwise stated.

Trans. Linn. Soc. Vol. XXII. tab. 59, p. 335.

GEN. SPHÆRIA.

(Figs. 99 to 154.)



F. Currey del. Tuffen West sc.

W. West imp.

All the figures magnified 325 Diameters, except where otherwise stated.